PRODUCT OF

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It's just an idea until you execute it

AVR/8051 USB PROGRAMMER

USER MANUAL

FOR WINDOWS 8.0 OS

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LIST OF CONTENTS

1 **Package Content** 3

2 **Introduction** 4

3 **Important safety warning and handling procedures** 5

4 **Getting Started with Windows 8** 6

i. Connecting Programmer 6

ii. Installing Drivers 6

5 **Programming Microcontroller** 12

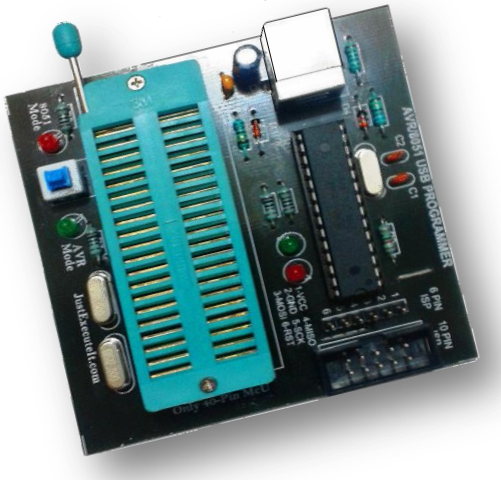
6 **Copyright Notice** 19

7 **Disclaimer** 19

8 **Trademark** 19

1. PACKAGE CONTENTS

a. AVR/8051 USB PROGRAMMER
b. A USB cable of type B-to-A, for connecting Programmer to a PC
c. 10-Pin FRC cable
d. CD with Software guide to AVR/8051 Programmer with 20-20 AR/8051 Projects Tutorials



(a). AVR/8051 USB ZIF PROGRAMMER

(b). A USB cable of type B-to-A, for connecting Programmer to a PC

(c).10-Pin FRC cable

(d). CD with Software guide to AVR/8051 Programmer with 20-20 AVR/8051 Projects Tutorials

2. INTRODUCTION

Microcontroller programming has been made simpler than ever before. AVR/8051 PROGRAMMER is very powerful yet Low cost and comfortable tool for any developer. Programmer gives the user a friendly environment with USB communication and easy GUI.

Features:

- ✓ Supports Windows Xp , Windows 7, Windows 8 , Windows Vista OS
- ✓ USB powered, No external supply is required.
- ✓ On Board 10-Pin FRC Socket, designed to connect Programmer to target development boards
- ✓ On Board 6-Pin Burg Strip, designed to connect programmer to Bread boards.
- ✓ 40 Pin ZIF Socket for programming only 40-Pin 8051/AVR Microcontrollers
- ✓ Enabled with SCK option to support targets with low clock speed (< 1,5MHz).
- ✓ supports wide range of AVR and 8051 microcontrollers such as:

ATmega128, ATmega1280, ATmega1281, ATmega1284P, ATmega128A, **ATmega16,** ATmega162, ATmega164P, ATmega165, ATmega165P ATmega168, ATmega168P, ATmega169, ATmega169P, **ATmega32,** ATmega324P, ATmega324PA, ATmega325, ATmega3250, ATmega3250P, ATmega325P, ATmega328P, ATmega329, ATmega3290,	ATmega3290P, ATmega329P, ATmega32A, ATmega32HVB, ATmega32M1, ATmega32U4, ATmega32U6, ATmega48, ATmega48P, ATmega64, ATmega640, ATmega644, ATmega644P, ATmega645, ATmega6450, ATmega649, ATmega6490, ATmega64A, **ATmega8,** ATmega8515, ATmega8535, ATmega88, ATmega88P, ATmega88PA, **ATmega8A.**	ATtiny12, ATtiny13, ATtiny13A, ATtiny15, ATtiny167, ATtiny22, ATtiny2313, ATtiny24, ATtiny25, ATtiny26, ATtiny261, ATtiny434, ATtiny44, ATtiny45, ATtiny461, ATtiny48, ATtiny84, ATtiny85, ATtiny861, ATtiny88.	AT90CAN128, AT90CAN32, AT90CAN64. AT90PWM2, AT90PWM2B, AT90PWM3, AT90PWM3B, AT90PWM81, AT90PWM216, AT90PWM2B, AT90PWM316. AT90USB1286, AT90USB1287, AT90USB162, AT90USB646, AT90USB647, AT90USB82.	AT90S1200, AT90S2313, AT90S2323, AT90S2343, AT90S4414, AT90S4433, AT90S4434, AT90S8515, AT90S8535, AT90SCR100H **AT89S51,** **AT89S52,** **AT89S53,** AT86RF401, AT89S2051 AT89S4051, AT89S8252, AT89S8253,

3. IMPORTANT SAFETY WARNING AND HANDLING PROCEDURES

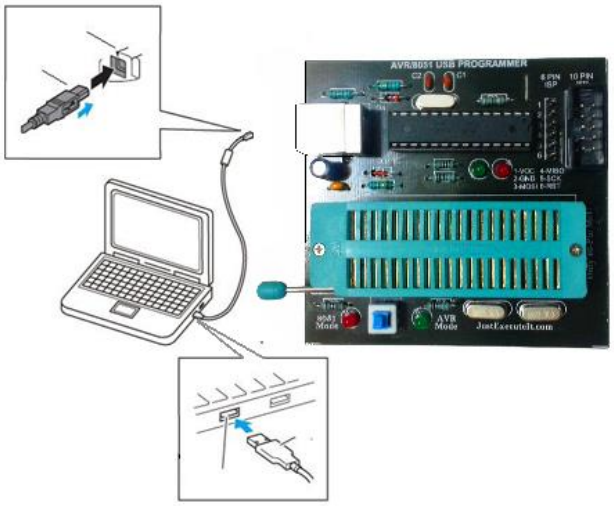
The AVR/8051 USB programmer is not intended for small children! Younger users should use this product only under adult supervision. By using this product, you agree not to hold "JustExecuteit.com" liable for any injury or damage related to the use or to the performance of this product. This product is not designed for, and should not be used in, applications where the malfunction of the product could cause injury or damage. Please take note of this additional precaution:

Since the PCB and its components are exposed, take standard precautions to protect your programmer from ESD (electrostatic discharge), such as first touching the surface the programmer is resting on before picking it up. When handing the programmer to another person, first touch their hand with your hand to equalize any charge imbalance between you so that you don't discharge through the programmer as the exchange is made.

4. GETTING STARTED WITH WINDOWS 8

i. Connecting Programmer

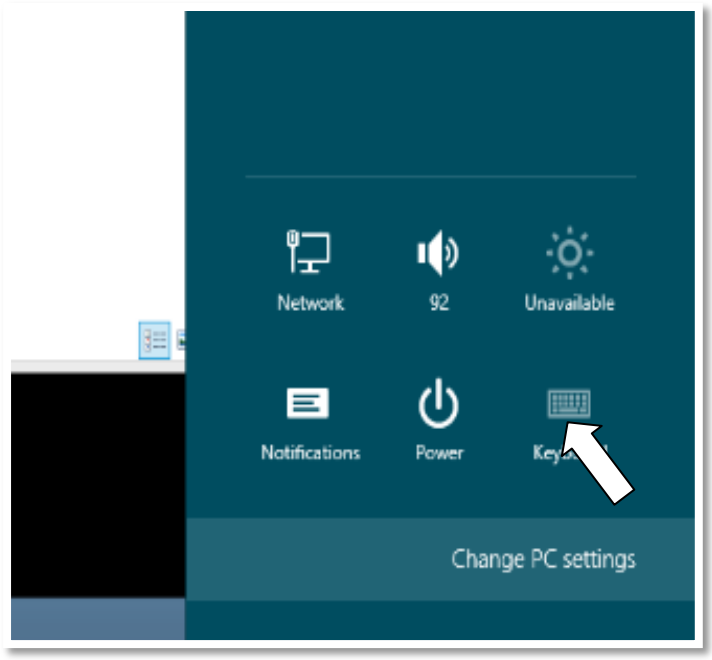
Plug one end of the USB cable into the USB connector on AVR/8051 USB PROG. Plug the other end into a USB port on your PC/Laptop as shown in the figure below.



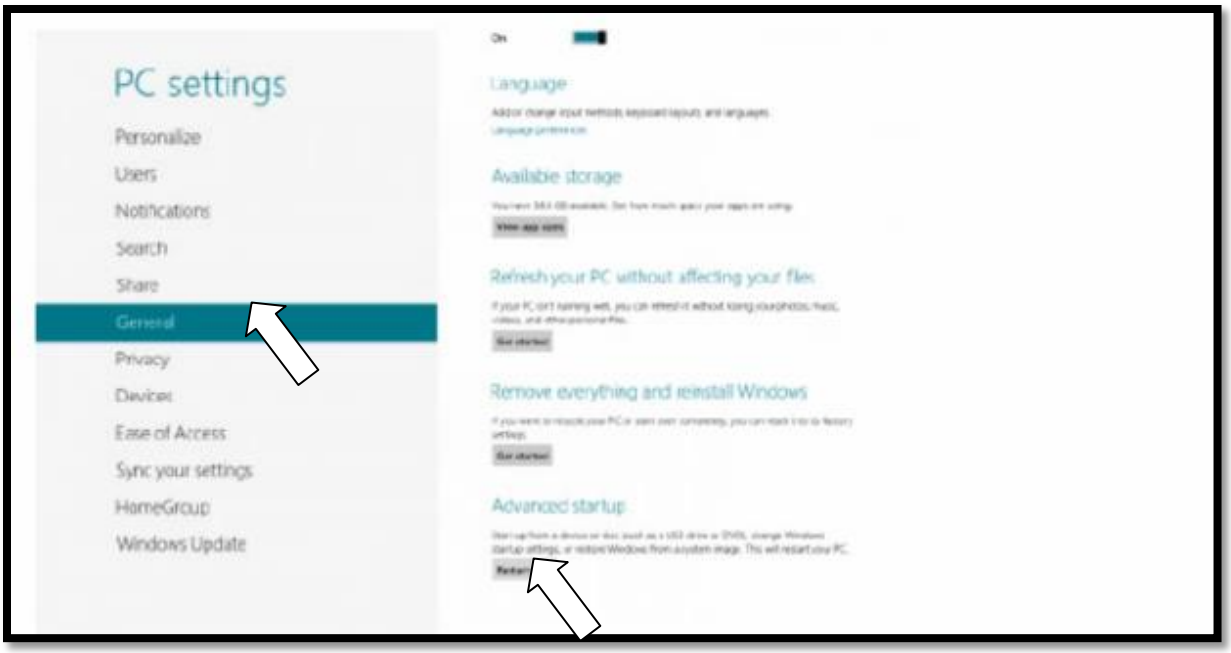
ii. Installing Drivers

1) Move the cursor over the top or bottom right corner or the screen and it will show extra options on the right side of the screen. Choose the **Settings** option (icon looks like a Gear).

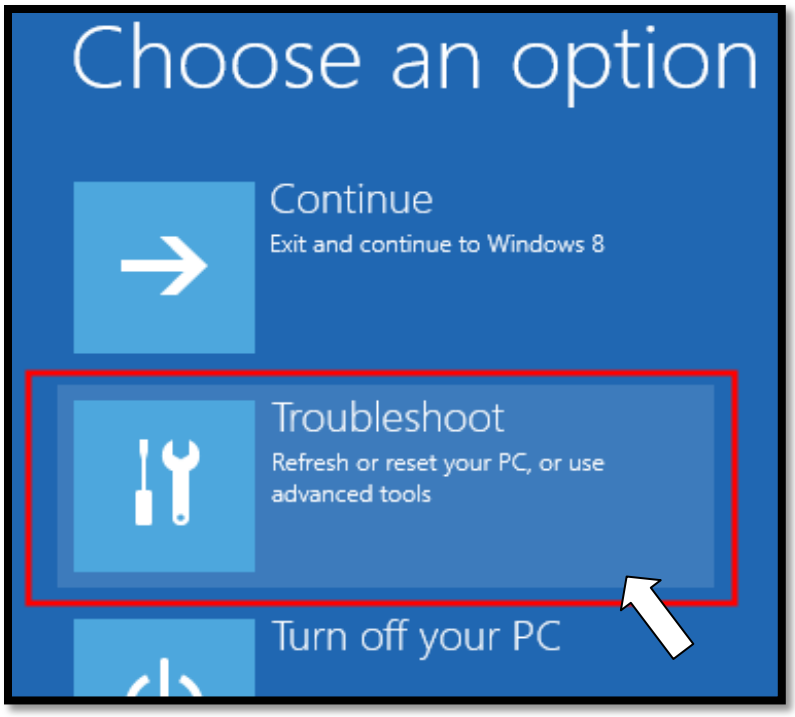
2) After this chose **'Change PC Settings'**



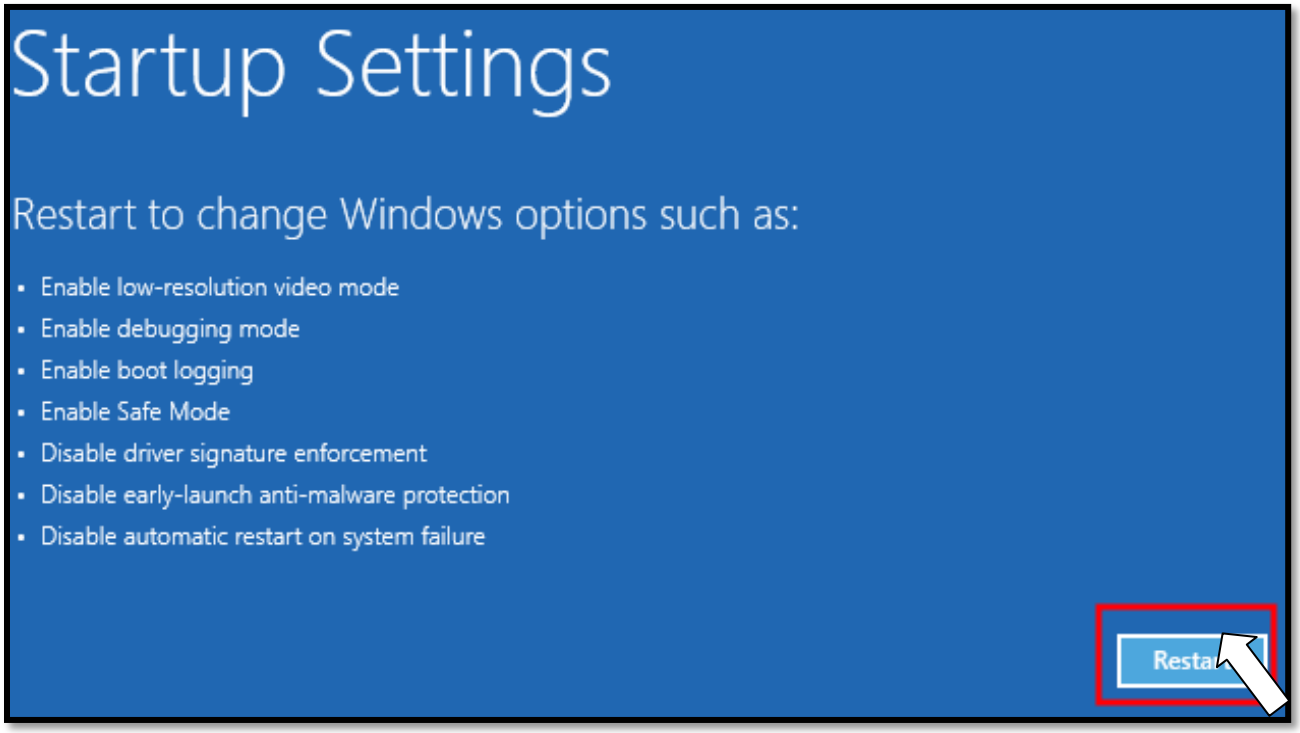
3) Choose '**General**' in the left menu and click on the **'Restart Now'** which is present under 'Advance Startup' Options at the bottom right side.



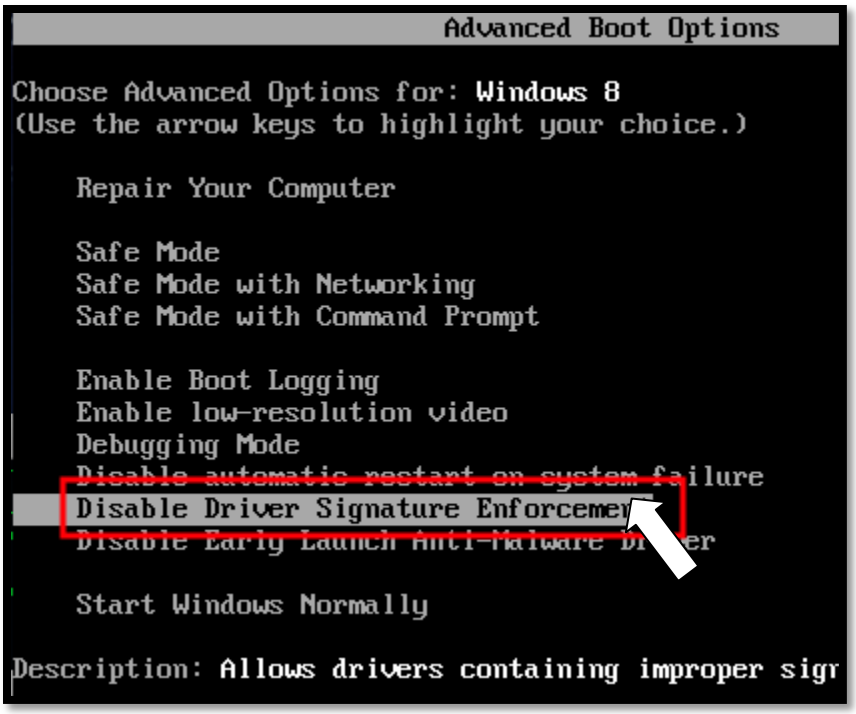
4) Select **'Troubleshoot**


Choose an option
Continue
Exit and continue to Windows 8
Troubleshoot
Refresh or reset your PC, or use advanced tools
Turn off your PC

5) Then select **'Advanced options'** and then **'Startup Settings'**. After this you will see something like this-

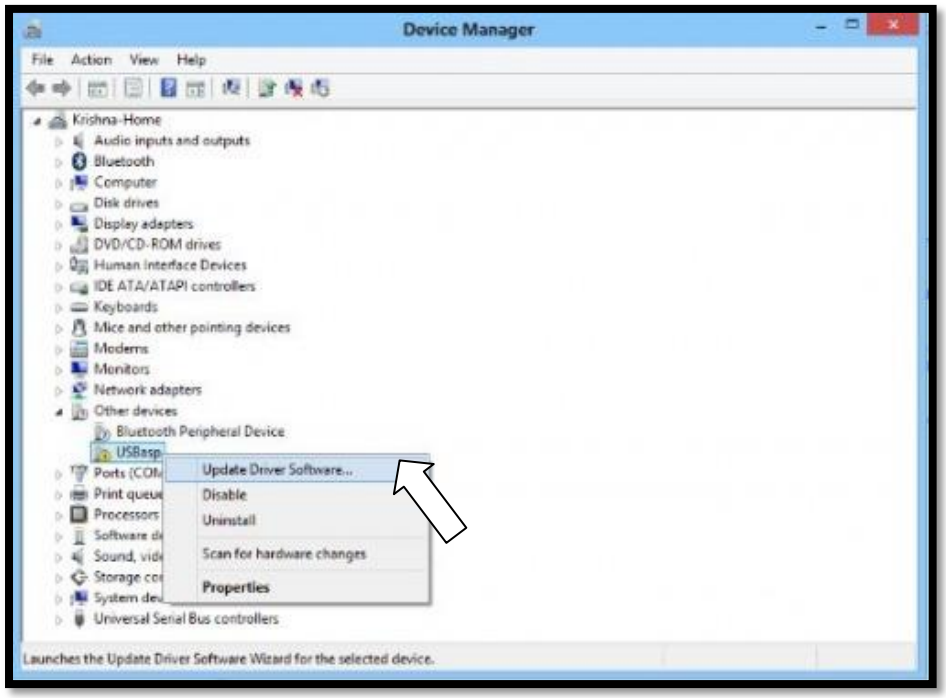

Startup Settings
Restart to change Windows options such as:
Enable low-resolution video mode
Enable debugging mode
Enable boot logging
Enable Safe Mode
Disable driver signature enforcement
Disable early-launch anti-malware protection
Disable automatic restart on system failure

6) Choose **'Disable Driver Signature Enforcement'** and hit the **Enter key** to start Windows.

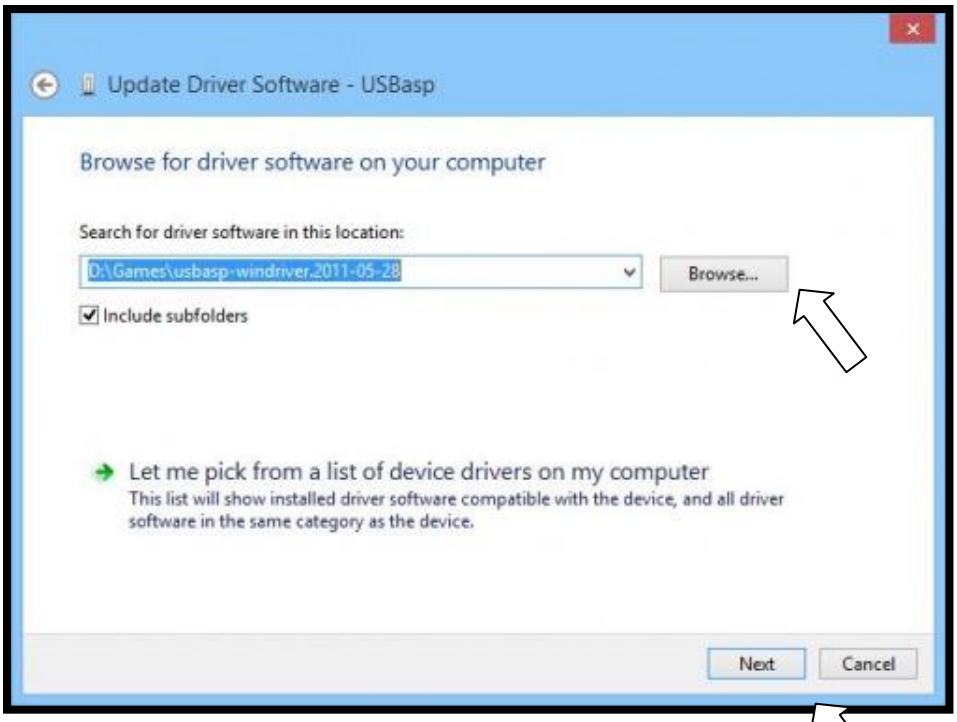

Advanced Boot Options
Choose Advanced Options for: Windows 8
(Use the arrow keys to highlight your choice.)
Repair Your Computer
Safe Mode
Safe Mode with Networking
Safe Mode with Command Prompt
Enable Boot Logging
Enable low-resolution video
Debugging Mode
Disable Driver Signature Enforcemen
Start Windows Normally
Description: Allows drivers containing improper sign

7) Now connect your USBasp programmer to the USB port of your PC/laptop. Ignore the message that 'Device driver software was not successfully installed'.

8) Take USBasp drivers from CD . Go to **Device Manager** in control Panel and you will find 'LibUSB-Win32 Devices'. Click on it and select **'Update Driver Software**...'



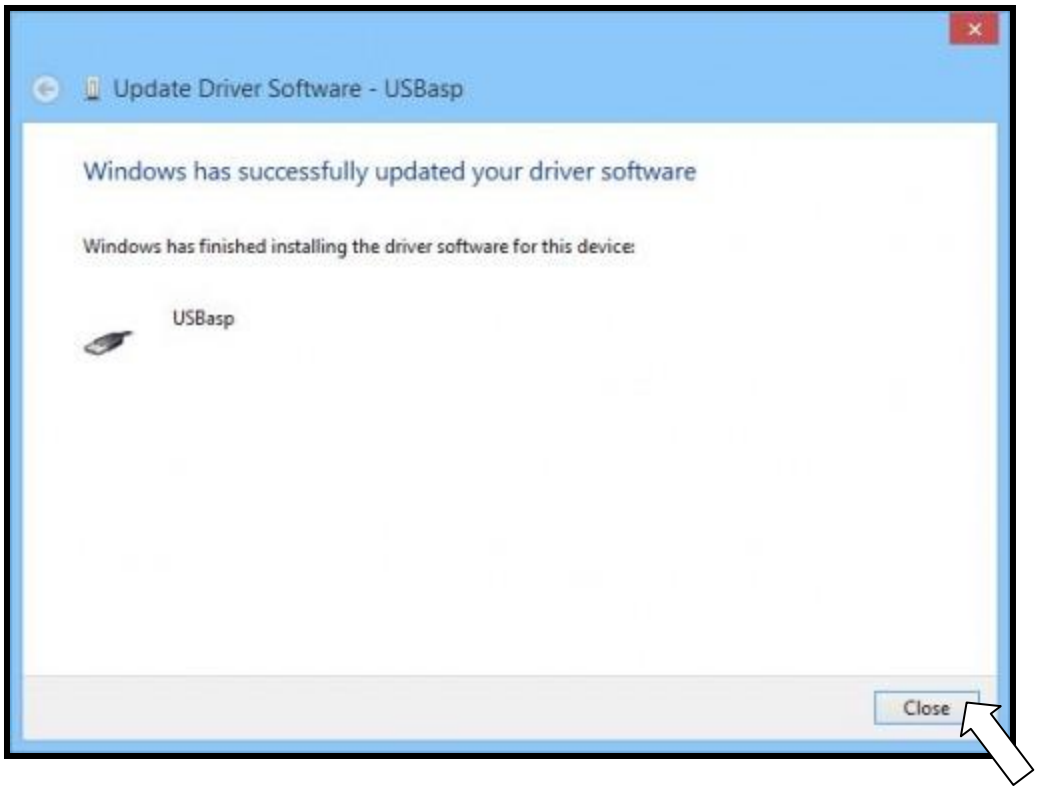
9) Select 'Browse my computer for driver software'. After this browse to the location where you have extracted the USBasp drivers


Update Driver Software - USBasp
Browse for driver software on your computer
Search for driver software in this location:
D:\Games\usbasp-windriver-2011-05-28
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

10) Click next and ignore the security warning 'Windows can't verify the publisher of this driver software' and select 'Install this driver software anyway'

Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

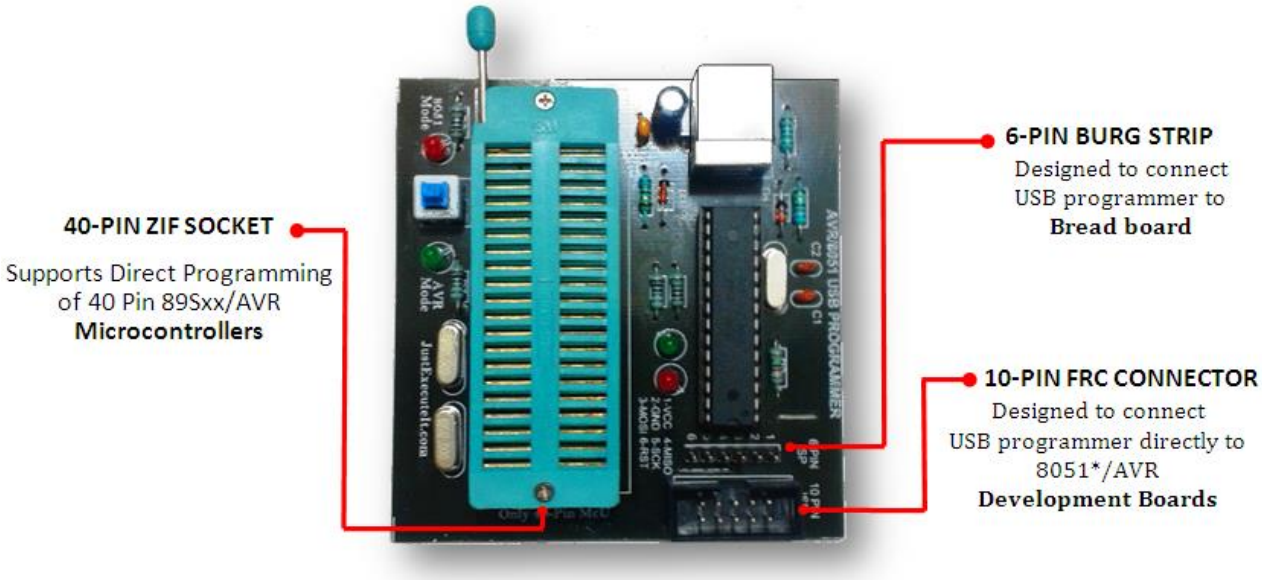
11)Woot! if everything goes alright you will see something like this -


Update Driver Software - USBasp
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
USBasp
Close

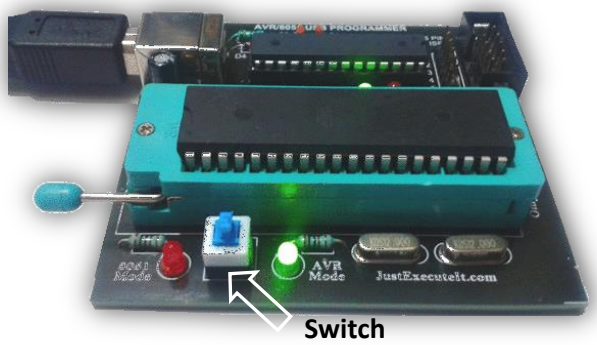
5. PROGRAMMING MICROCONTROLLER

Till now we have successfully completed the driver's installation for Windows XP Operating system .Next we will see how to **dump a '.HEX'** file **into Microcontrollers**. As shown in the picture below there are 3 ways by which a .HEX file can be dumped into microcontroller depending upon the project you are working on.

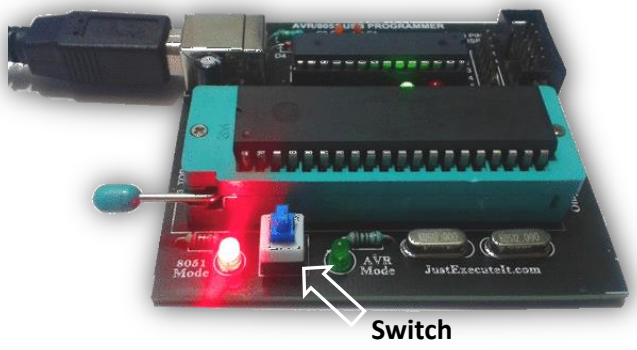
a. By Using 40-Pin ZIF Socket
b. By using 6-Pin Burg strip
c. By using 10-pin FRC Connector


40-PIN ZIF SOCKET
Supports Direct Programming of 40 Pin 89Sxx/AVR Microcontrollers
6-PIN BURG STRIP
Designed to connect USB programmer to Bread board
10-PIN FRC CONNECTOR
Designed to connect USB programmer directly to 8051*/AVR Development Boards

a. **<u>By using 40-Pin ZIF Socket</u>:** It supports only **40 Pin 89Sxx/AVR Microcontrollers.** The desired mode of programming can selected using a switch provided. As a default the ZIF connector stays at 8051(89SXX) Mode (Glowing **RED** LED ON),On pressing switch ZIF connector shifts to AVR Mode(Glowing **GREEN** LED ON)

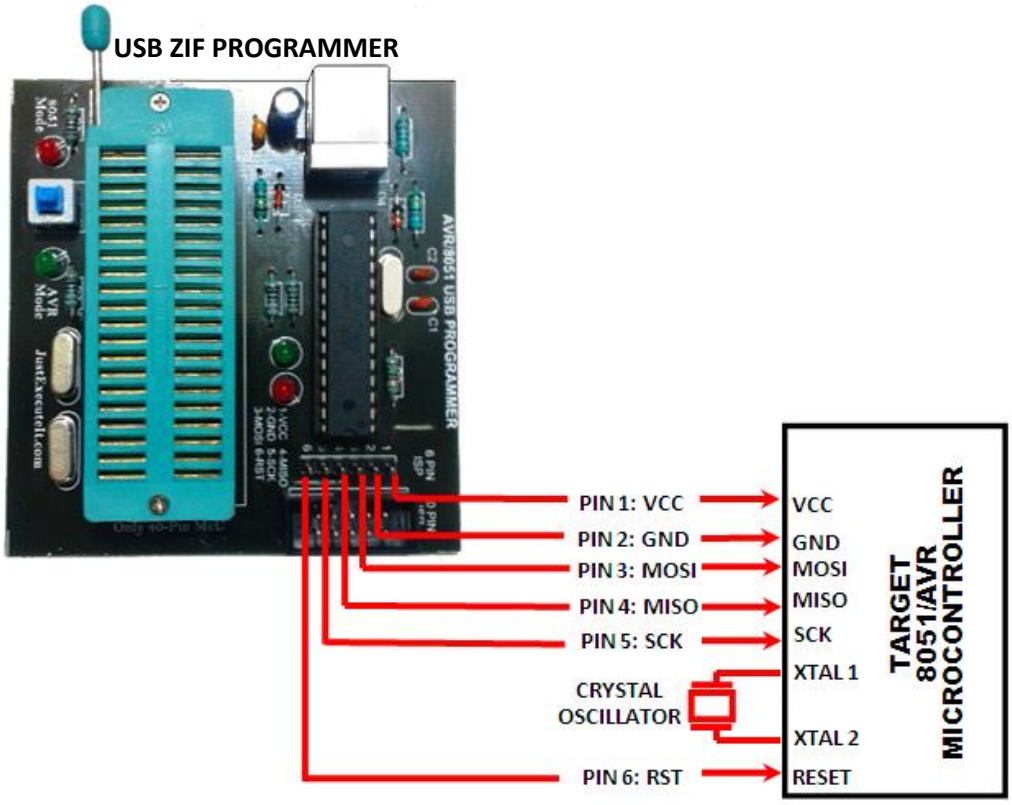


ZIF Connector is in AVR Mode



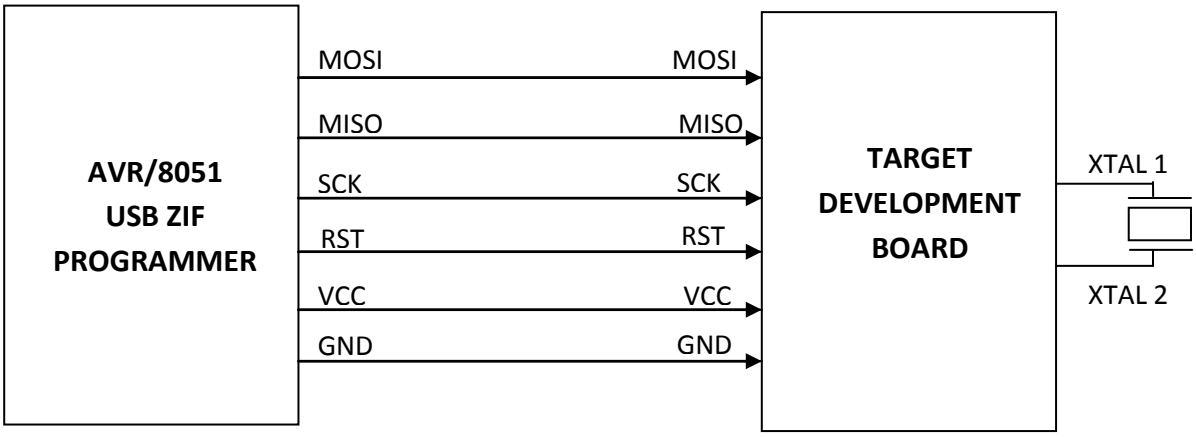
ZIF Connector is in 8051 Mode

b. **USING 6-PIN BURG STRIP:** This can be used while working at **Bread Board .**By using a simple 6 Pin Female **Relimate** connector cable, programmer can be interfaced to Bread Board **.**Make sure that following pin interfacing is made before installation .Such as MOSI, MISO, SCK, RST, VCC, GND Pins of **AVR/8051USB PROGRAMMER** intersects exactly with MOSI, MISO, SCK, RST, VCC, GND Pins of **TARGET DEVELOPMENT BOARD.** Crystal Oscillator =12Mhz(Mostly)

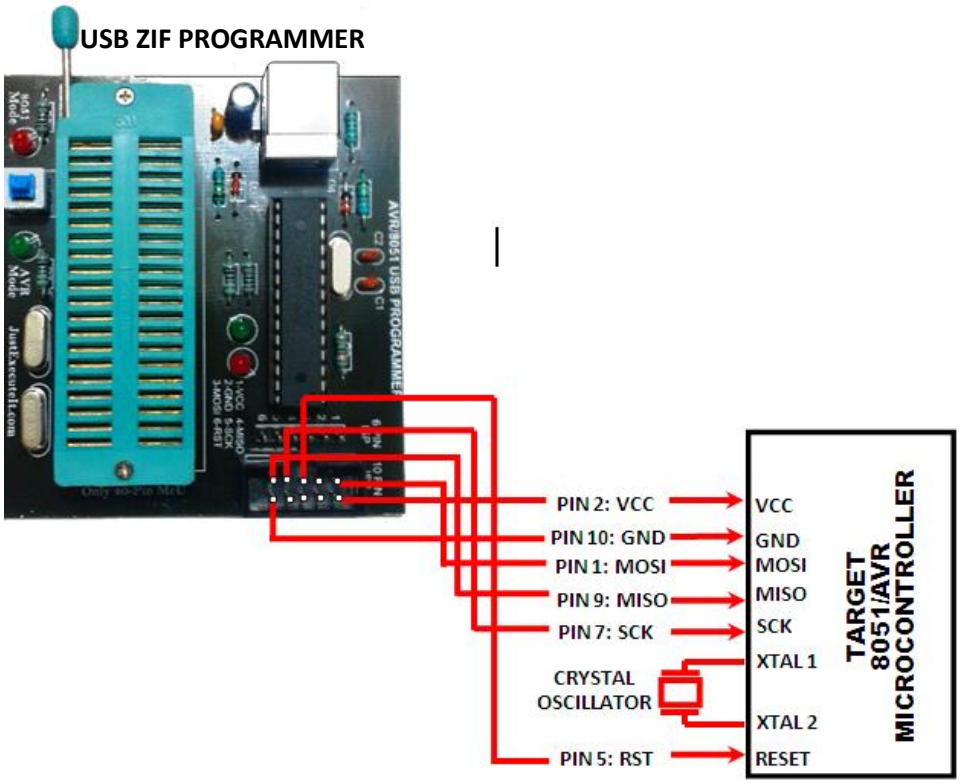


TARGET MICROCONTROLLER AT BREAD BOARD

c. **USING 10-PIN FRC CONNECTOR**



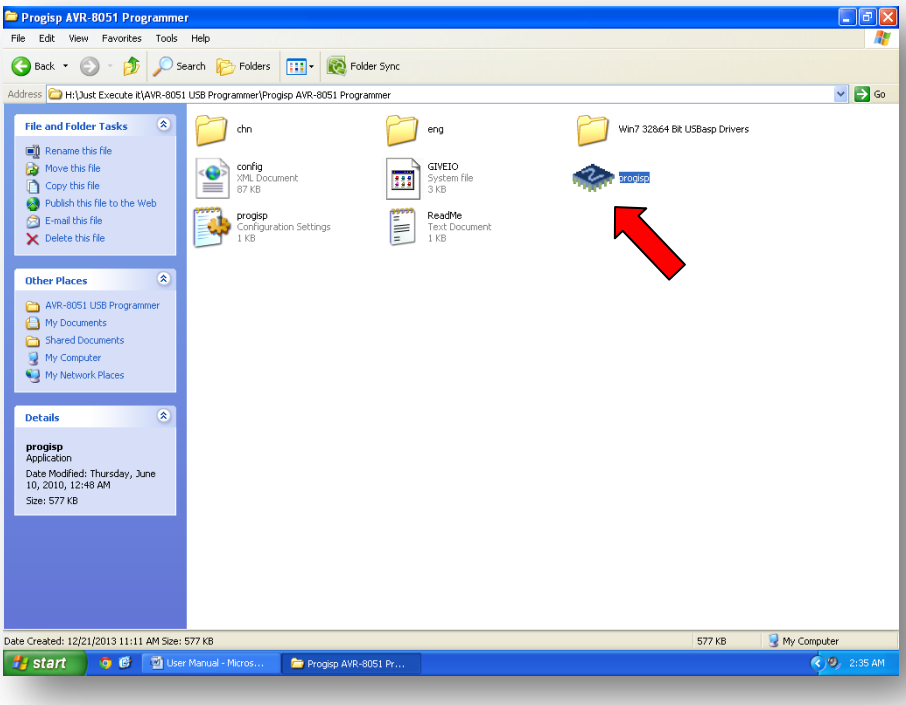
Detailed pin configuration for **AVR/8051 USB PROGRAMMER** is as follows



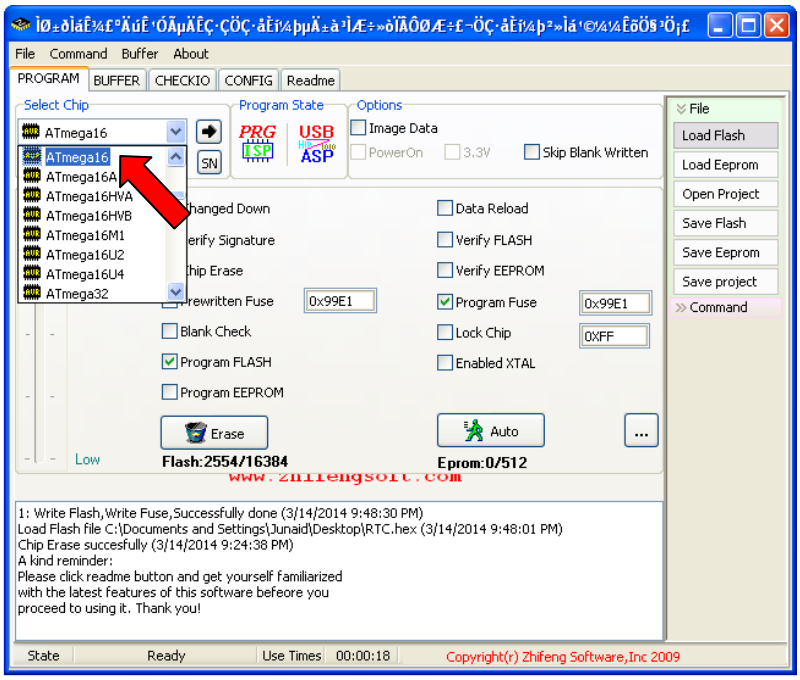
TARGET MICROCONTROLLER AT DEVELOPMENT BOARD

NOTE: While Using 8051 Development board, Please remove capacitor 10uf from reset circuit as reset Pin is used for programming.

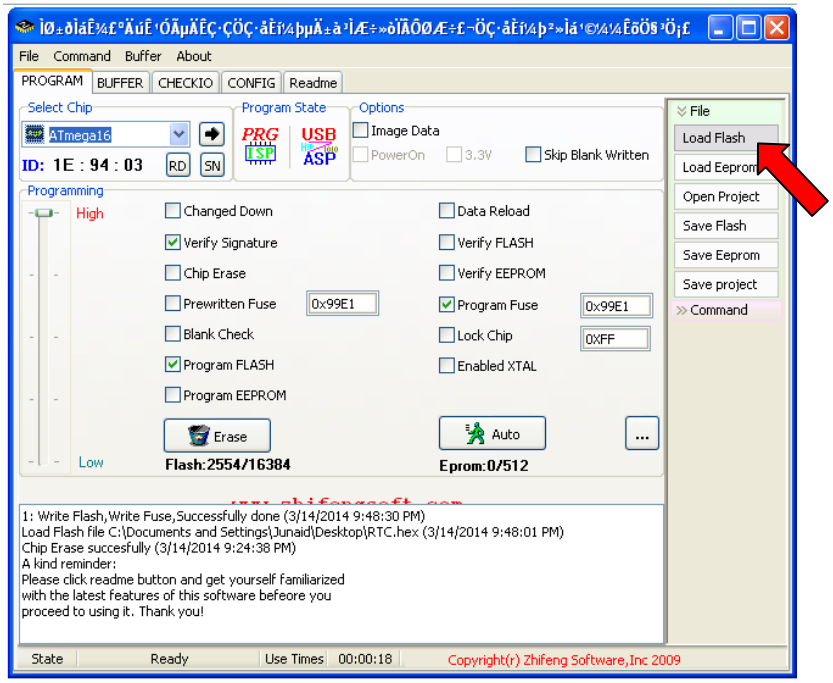
Step 1: Go to **Progisp AVR/8051 Programmer** Folder Present in CD and open **Progisp**



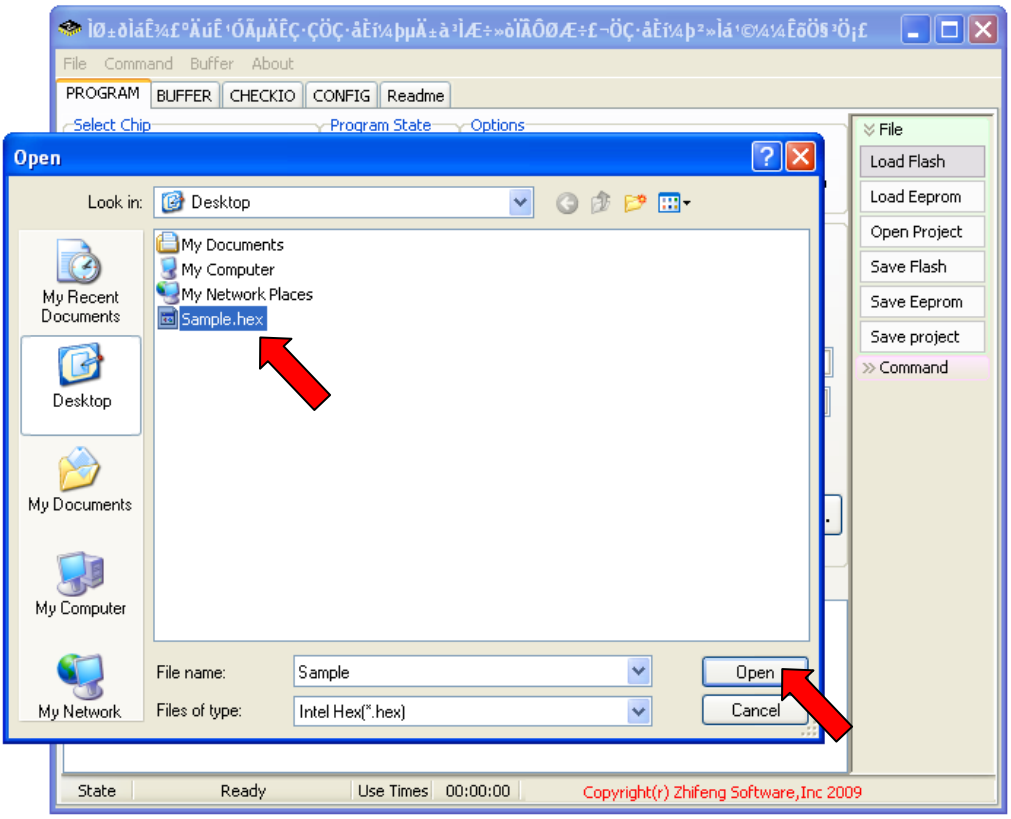
Step 2: Select the Micro controller



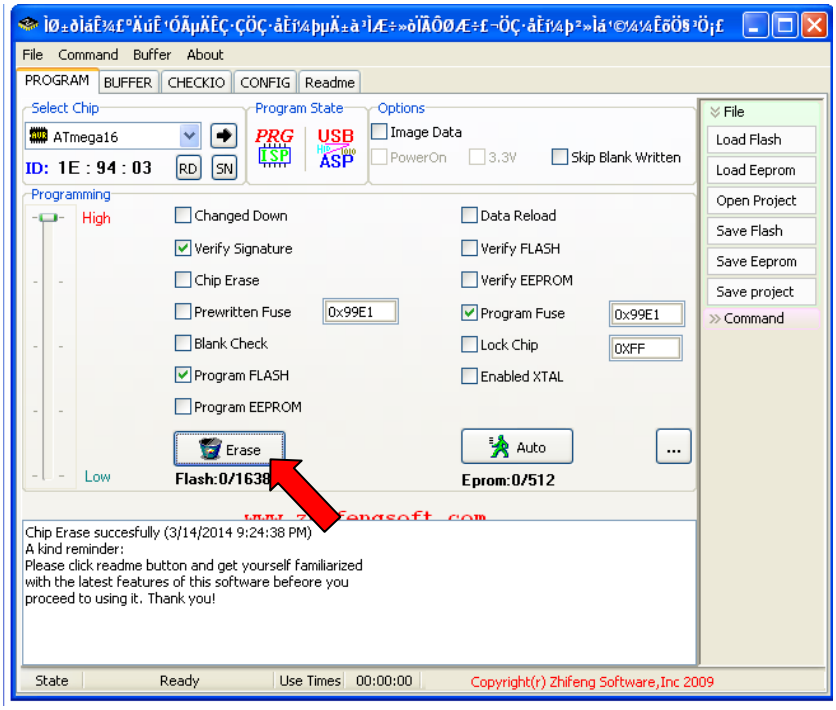
Step 3: Click on **Load Flash** to locate the **.HEX File**



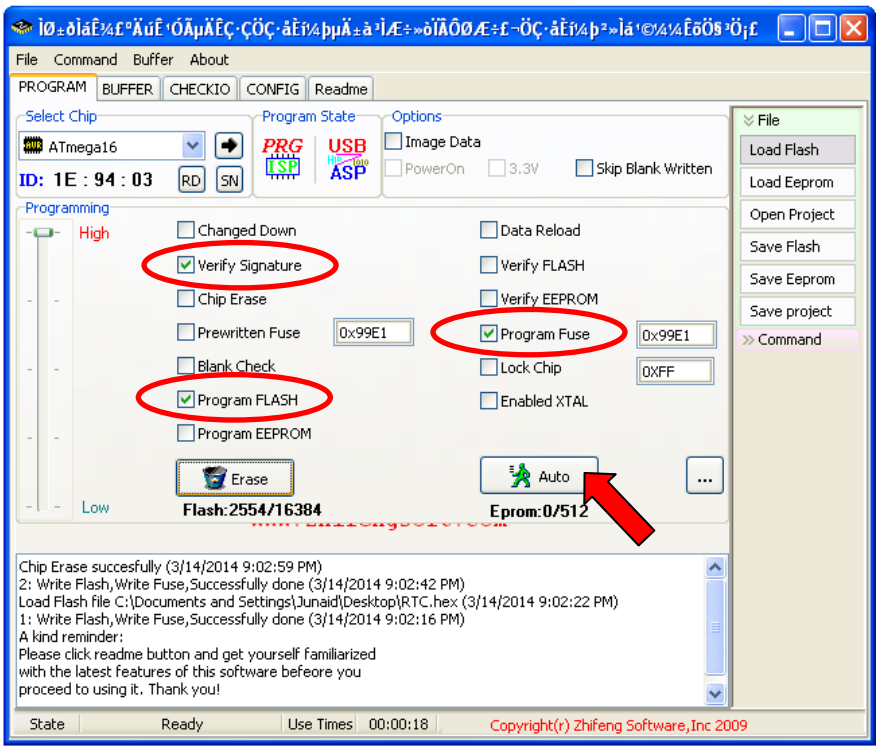
Step 4: Locating **Sample.HEX** file then click **Open**



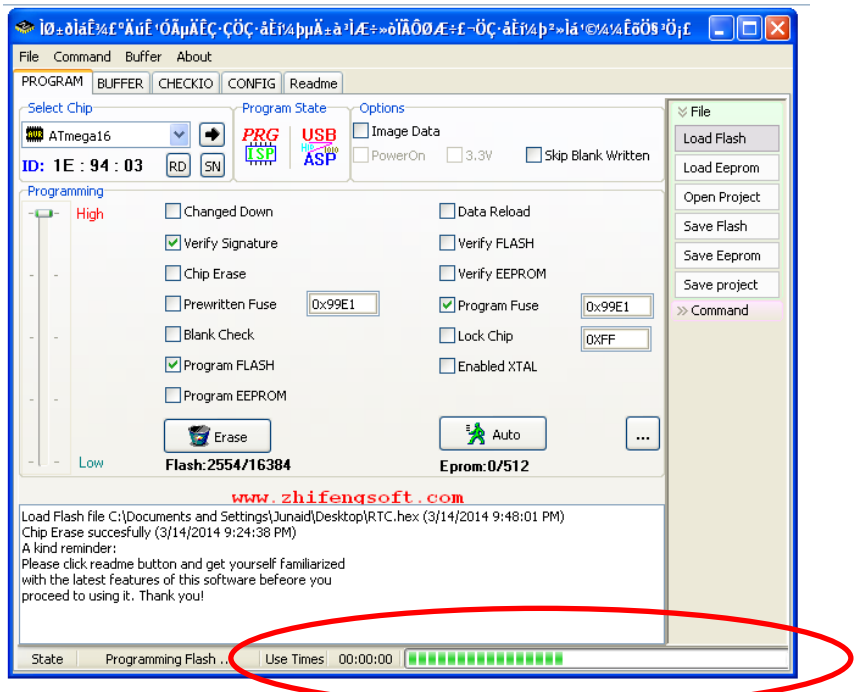
Step 5: Click **Erase**



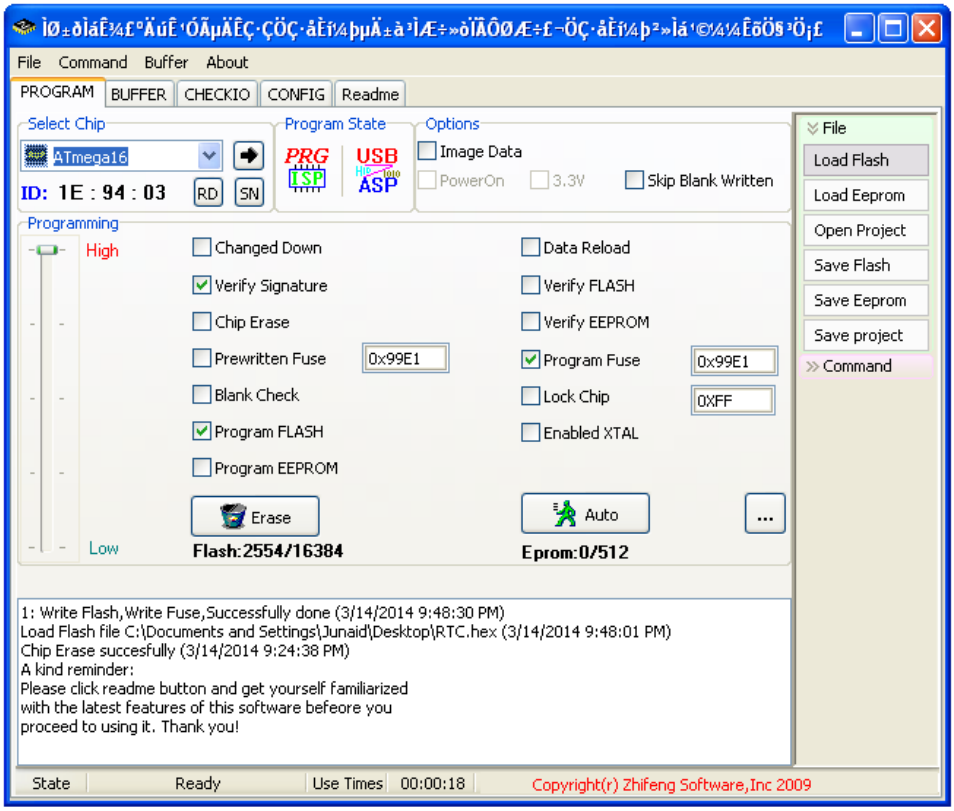
Step 6: Mark **1.** Verify Signature **2.** Program FLASH **3.** Program Fuse for **QUICK PROGRAMMING** and then Click **Auto**



Step 7: Wait few seconds while it's processing.



Step8: Now you can proceed to use your Microcontroller for your Application .**Thank you**



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